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EXAMINER
CHANG, JON CARLTON

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,701

Applicant(s)

KASUTANI, EIJI

Examiner

Jon Chang

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-8,11,13-16,18-21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,5-8 and 11 is/are allowed.
- 6) ☒ Claim(s) 13-16,18-21 and 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Applicant's Submissions and Arguments

1. The amendment and the declaration under 37 C.F.R. 1.132, filed February 2, 2005, have been entered and made of record. Claim 27 has been amended. Claims 2, 3, 5-8, 11, 13-16, 18-21 and 23-27 are pending.

Regarding the "non patent literature documents" submitted with the IDS of May 26, 2004, the Examiner has considered all of the listed documents, in light of Applicant's remarks on page 16 of the current response. An initialed and signed copy of the corresponding PTO-1449 is attached.

In response to the amendment, the objection to claim 27 due to an informality is withdrawn.

Applicant's arguments (pages 17-18 of the response) and declaration under 37 C.F.R. § 1.132 have been fully considered, but are not deemed to be sufficient to remove the article, "Image Retrieval System Using Compact Color Layout Descriptor" by Kasutani et al., as a reference against the current claims. By the declaration, Applicant has shown that he is the inventor of the currently claimed invention, and that the features and characteristics of the article relied on by the Examiner in rejecting various claims are attributable to him; in essence, the reference is not "by others". Applicant goes on to state (e.g., page 18, first paragraph) that the article is unavailable as a reference under 35 U.S.C. § 102(a). However, the Examiner would like to point out that since the article was published on September 29, 1999, which is more than one year prior to December 11, 2000, the date of filing of the application in the United States, the article qualifies as a reference under 35 U.S.C. § 102(b). In this situation,

therefore, the declaration is insufficient to remove the article as a reference against the pending claims. The rejections will therefore be maintained.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13-16, 18-21 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,345,275 to Lee, and the document, "Image Retrieval System Using Compact Color Layout Descriptor" by Kasutani et al. (hereinafter "Kasutani").

Regarding claim 13, Lee discloses an image retrieval device for retrieving an image being similar to an inquired image from images stored in an image database comprising:

a first coefficient transforming means for transforming a first group of image feature descriptors extracted from image data accumulated in said image database and then generating a second group of image feature descriptors to be used for calculating similarity (column 1, lines 61-65; column 2, lines 10-12; column 2, lines 19-20. The patent is only explicit with regard to transforming for the feature descriptors of the inquired image, while being silent with regard to transforming the feature descriptors for

images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles are created for the inquired image via the transforming, column 2, lines 15-18. Presumably, the profiles for the image in the database are created in the same way, and therefore the description of the transforming means is applicable to images in the database.);

a second coefficient transforming means for transforming a first group of image feature descriptors extracted from image data of said inquired image and then generating a second group of image feature descriptors to be used for calculating similarity (column 1, lines 61-65; column 2, lines 10-12);

a similarity calculating means for calculating similarity by comparing said second group of image feature descriptors for each piece of image data generated by said first coefficient transforming means with said second group of image feature descriptors transformed by said second coefficient transforming means (column 2, lines 53-54);

an image size resizing means for resizing image data accumulated in said image database and/or inquired image (column 2, lines 9-11 and 34-39. Lee teaches two processes which are resizing: normalization and dividing into blocks for DCT processing, the latter being analogous to that described in Applicant's specification);
and

an image feature descriptor producing means for performing an orthogonal transform on an image obtained by said image size resizing means and producing an orthogonal transform coefficient and using said orthogonal transform coefficient as a first group of image feature descriptors, wherein the image size resizing means

comprises a block dividing means for partitioning the image data into blocks (column 2, lines 8-10; column 2, lines 35-39; the DCT is an orthogonal transform).

Lee does not disclose that the image size resizing means further comprises a dominant color calculating means for calculating a dominant color of each of blocks obtained by said block dividing means and an image creating means for creating an image using said dominant color of each of said blocks as a pixel. However, in an analogous environment, Kasutani discloses this as well as dividing the image into blocks (Note Applicant's concise explanation of the document, provided in the Information Disclosure Statement filed May 26, 2004, hereinafter referred to as the "concise explanation"; the dominant color is the average color of each block). Kasutani states that this technique maximizes retrieval accuracy (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art to modify Lee's invention according to the teachings of Kasutani.

Regarding claim 14, Kasutani further discloses that said image creating means extracts a color average of entire pixels contained in each of said blocks as said calculated dominant color of each of said blocks (see concise explanation).

Regarding claim 15, Kasutani discloses the image retrieval device according to Claim 13, wherein said block dividing means partitions said image into 64 blocks (note Fig.1, $8 \times 8 = 64$; see also concise explanation).

Claim 16 is similar to claim 13, and therefore the discussion provided above for claim 13 is applicable to claim 16. The difference between the two claims, essentially, is that claim 16 recites performing a discrete cosine transform rather than an orthogonal

transform. Lee disclose performing a discrete cosine transform (DCT, column 2, lines 38-29).

Claim 18 is similar to claim 13, but requires only a single coefficient transforming means. See the remarks provided above for claim 13 regarding common elements. Lee discloses a single coefficient transforming means (e.g., Fig.1, element 106), but does not disclose that that coefficient transforming means transforms the feature vectors for the images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles are created for the inquired image via the transforming, column 2, lines 15-18. Presumably, the profiles for the image in the database are created in the same way. It would have been obvious to one of ordinary skill in the art to utilize the coefficient transforming means to perform the transforming of the coefficients of the images in the database, because this would keep system size and cost down. For the other features of claim 18, see the additional discussion for claim 13.

Regarding claims 19 and 20, see the discussion provided above for claims 14 and 15.

Claim 21 is similar to claim 16, but requires only a single coefficient transforming means. See the remarks provided above for claim 16 regarding common elements. Lee discloses a single coefficient transforming means (e.g., Fig.1, element 106), but does not disclose that that coefficient transforming means transforms the feature vectors for the images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles

are created for the inquired image via the transforming, column 2, lines 15-18.

Presumably, the profiles for the image in the database are created in the same way. It would have been obvious to one of ordinary skill in the art to utilize the coefficient transforming means to perform the transforming of the coefficients of the images in the database, because this would keep system size and cost down. For the other features of claim 21, see the additional discussion for claim 13.

Regarding claims 23-25, remarks analogous to those provided above for claims 13-15 are applicable.

Regarding claim 26, remarks analogous to those provided above for claim 16 are applicable.

Claim 27 is drawn to a storage medium storing a program, which is similar to claim 13. The discussion provided above for claim 13 is applicable to claim 27. Lee is silent with regard to a storage medium storing a program. However, Lee's system is utilized in a computer (see abstract, and column 1, lines 23-25). The Examiner takes Official Notice that it is well known to utilize storage media storing programs in computers. It would have been obvious to one of ordinary skill in the art to provide a storage medium storing a program for implementing Lee's method, as modified by Kasutani, because this would allow the method to function on the computer.

Allowable Subject Matter

4. Claims 2, 3, 5-8 and 11 are allowed.

Reference Cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,870,965 to Kim et al. discloses a texture-based image retrieval method which uses a Gabor filter in the frequency domain. Data texture descriptors are extracted from images in a database as well as a query image. The texture descriptors are matched (compared) so as to determine similarity.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Chang whose telephone number is (571) 272-7417. The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (571)272-7414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jon Chang
Primary Examiner
Art Unit 2623

Jon Chang
May 14, 2005